

Claims

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1. A method of managing the state of a computer network with redundant network connections, comprising:
 - determining the state of a primary network connection between each pair of networked nodes;
 - determining the state of a redundant network connection between each pair of networked nodes; and
 - selecting either the primary network connection or the redundant network connection for sending and receiving data between each pair of networked nodes, such that the network path selected to be used to communicate is selected independently based on the determined network states for each pair of networked nodes.
2. The method of claim 1, further comprising building a network status table that indicates results of determining the state of primary and redundant network connections between each pair of networked nodes.
3. The method of claim 2, wherein the network status table comprises data representing network status based on data received at a node from other network nodes.

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4. The method of claim 3, wherein the data received at a node from other networked nodes comprises a diagnostic message.
5. The method of claim 4, wherein the data received at a node from other networked nodes comprises data representing the ability of the other nodes to receive data from other different network nodes.
6. The method of claim 2, wherein the network status table comprises data representing network status based on a node's ability to send data to other nodes.
7. The method of claim 3, wherein the network status table further comprises data representing network status based on a node's ability to send data to other nodes.
8. The method of claim 1, wherein selecting the primary or redundant network connection for communication between each pair of networked nodes comprises:
 - selecting the primary network connection if the state of the primary network connection is determined to be operable; and
 - selecting the redundant network connection if the state of the primary network connection is determined to be inoperable.
9. The method of claim 1, wherein selecting the primary or redundant network connection for communication between each pair of networked nodes comprises:

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selecting the primary network connection to transmit data if the state of the primary network connection is determined to be operable to transmit data;

selecting the primary network connection to receive data if the state of the primary network connection is determined to be operable to receive data;

selecting the redundant network connection to transmit data if the state of the primary network connection is determined to be inoperable to transmit data; and

selecting the redundant network connection to receive data if the state of the primary network connection is determined to be inoperable to receive data.

10. The method of claim 1, wherein selecting a connection for sending and receiving data between each pair of network nodes comprises selecting a connection for sending and receiving data from a first node to one or more connected intermediate nodes, and selecting a connection for sending and receiving data from an intermediate node to a second node.

11. A computer network interface, the interface operable to:

determine the state of a primary network connection between the network interface and the network interfaces of other network nodes;

determine the state of a redundant network connection between the network interface and the network interfaces of other network nodes; and

select either the primary network connection or the redundant network connection for communication with each of the other network nodes, such that the

network connection selected is selected independently based on the determined network states for each other network node.

12. The computer network interface of claim 11, the interface further comprising a network status table that indicates results of the determination of the state of the primary and redundant network connections between the computer network interface and the network interfaces of other network nodes.

13. The computer network interface of claim 12, wherein the network status table comprises data representing network status based on data received at a node from other network nodes.

14. The computer network interface of claim 13, wherein the data received at a node from other networked nodes comprises a diagnostic message.

15. The computer network interface of claim 14, wherein the data received at a node from other networked nodes further comprises data representing the ability of the other nodes to receive data from other different network nodes.

16. The computer network interface of claim 12, wherein the network status table comprises data representing network status based on a node's ability to send data to other nodes.

17. The computer network interface of claim 13, wherein the network status table further comprises data representing network status based on a node's ability to send data to other nodes.

18. The computer network interface of claim 11, wherein selecting either the primary network connection or the redundant network connection for communication with each of the other network nodes comprises:

selecting the primary network connection if the state of the primary network connection is determined to be operable; and

selecting the redundant network connection if the state of the primary network connection is determined to be inoperable.

19. The computer network interface of claim 11, wherein selecting either the primary network connection or the redundant network connection for communication with each of the other network nodes comprises:

selecting the primary network connection to transmit data if the state of the primary network connection is determined to be operable to transmit data;

selecting the primary network connection to receive data if the state of the primary network connection is determined to be operable to receive data;

selecting the redundant network connection to transmit data if the state of the primary network connection is determined to be inoperable to transmit data; and

selecting the redundant network connection to receive data if the state of the primary network connection is determined to be inoperable to receive data.

20. The computer network interface of claim 11, wherein selecting a connection for sending and receiving data between each pair of network nodes comprises selecting a connection for sending and receiving data from a first node to one or more connected intermediate nodes, and selecting a connection for sending and receiving data from an intermediate node to a second node.

21. A machine-readable medium with instructions thereon, the instructions when executed on a computer operable to cause the computer to:

determine the state of a primary network connection between the network interface and the network interfaces of other network nodes;

determine the state of a redundant network connection between the network interface and the network interfaces of other network nodes; and

select either the primary network connection or the redundant network connection for communication with each of the other network nodes, such that the network connection selected is selected independently based on the determined network states for each other network node.

22. The machine-readable medium of claim 21, the instructions further operable to cause a computer to create and maintain a network status table that indicates results of

the determination of the state of the primary and redundant network connections between the computer network interface and the network interfaces of other network nodes.

23. The machine-readable medium of claim 22, wherein the created network status table comprises data representing network status based on data received at a node from other network nodes.

24. The machine-readable medium of claim 23, wherein the data received at a node from other networked nodes comprises a diagnostic message.

25. The machine-readable medium of claim 24, wherein the data received at a node from other networked nodes further comprises data representing the ability of the other nodes to receive data from other different network nodes.

26. The machine-readable medium of claim 22, wherein the created network status table comprises data representing network status based on a node's ability to send data to other nodes.

27. The machine-readable medium of claim 23, wherein the network status table further comprises data representing network status based on a node's ability to send data to other nodes.

28. The machine-readable medium of claim 21, wherein selecting either the primary network connection or the redundant network connection for communication with each of the other network nodes comprises:

selecting the primary network connection if the state of the primary network connection is determined to be operable; and

selecting the redundant network connection if the state of the primary network connection is determined to be inoperable.

29. The machine-readable medium of claim 21, wherein selecting either the primary network connection or the redundant network connection for communication with each of the other network nodes comprises:

selecting the primary network connection to transmit data if the state of the primary network connection is determined to be operable to transmit data;

selecting the primary network connection to receive data if the state of the primary network connection is determined to be operable to receive data;

selecting the redundant network connection to transmit data if the state of the primary network connection is determined to be inoperable to transmit data; and

selecting the redundant network connection to receive data if the state of the primary network connection is determined to be inoperable to receive data.

30. The machine-readable medium of claim 21, wherein selecting a connection for

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1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	